

What we claim

1. A storage system comprising:

a storage device; and

a first controller and a second controller both connected to the storage device and a host system,

wherein the first controller has a first memory and a second memory,

wherein, the second controller has a third memory,

wherein, in the case where the first controller receives data from the host system, the first controller stores the data in the first and the second memories and sends a response to the host system, and then the first controller transfers the data stored in the second memory to the third memory.

2. A storage system according to claim 1, further comprising a first power unit and a second power unit,

wherein the first memory of the first controller receives power feeding from the first power unit,

wherein the second memory of the first controller and the third memory of the second controller receive power feeding from the second power unit.

3. A storage system according to claim 1, further comprising a first, a second and a third power unit,

wherein the first memory receives power feeding from the first power unit,

wherein the second memory receives power feeding from the second power unit,

wherein the third memory receives power feeding from the third power unit.

4. A storage system according to claim 1, further comprising a power unit,

wherein the first memory and the second memory receive power feeding from the power unit,

wherein the second memory includes a battery and charges the battery by the use of the power unit.

5. A storage system according to claim 4,

wherein, in the case where a failure occurs in the power unit, the second memory switches the power feeding from the power unit to power feeding from the battery.

6. A storage system according to claim 2, wherein the second memory is a FIFO buffer.

7. A storage system according to claim 6, wherein the storage device is a plurality of storage devices.

8. A storage system according to claim 7, wherein the second memory has a unit for indicating presence or absence of data stored in the second memory.

9. A storage system comprising:

a host interface unit connected to a host system;

a switching unit connected to the host interface unit;

a first and a second controller connected to the switching unit; and

a storage device connected to the first and the second controller,

wherein the first controller has a first memory and a second memory,

wherein the second controller has a third memory,

wherein, in the case where the first controller receives data from the host system, the first controller stores the data in the first and the second memory and sends a response to the host system, and then the first controller transfers the data stored in the second memory to the third memory.

10. A storage system comprising:

a disk drive;

a first cache memory for temporarily storing data sent from a host system so as to be written on the disk drive;

a second cache memory for storing a duplicate of the data to be written on the disk drive; and

a FIFO buffer for temporarily storing the duplicate of the data sent from the host system to transfer the duplicate of the data to the second cache memory,

wherein, at the time when the data sent from the host system are stored in the first cache memory and the

duplicate of the data sent from the host system are stored in the FIFO buffer, the host system is informed about the completions of data writing.

11. A storage system according to claim 10, further comprising:

a first power unit connected to the first cache memory; and

a second power unit connected to the second cache memory, the second power unit being independent from the first power unit,

wherein the FIFO buffer is connected to the second power unit.

12. A storage system according to claim 10, further comprising:

a first power unit connected the first cache memory;

a second power unit connected to the second cache memory, the second power unit being independent from the first power unit; and

a third power unit connected to the FIFO buffer, the third power unit being independent from the first power unit.

13. A storage system according to claim 10, further comprising:

a first power unit connected the first cache memory;  
and

a second power unit connected to the second cache memory, the second power unit being independent from the first power unit,

wherein the FIFO buffer is connected to the first power unit and provided with a battery for feeding power to the FIFO buffer in place of the first power unit in case of failure in the first power unit.

14. A storage system according to claim 11, comprising a data remaining indicator for indicating whether or not all the duplicate of the data sent from the host system has been transferred from the FIFO buffer to the second cache memory.

15. A method of writing data in a storage system having duplex cache memory, comprising the steps of:

writing data in one of the duplex cache memory for duplicating and storing data sent from host system;

writing the data in a FIFO buffer capable of performing writing with a speed higher than that of the other one of the duplex cache memory;

confirming that the data have been correctly written in said one of the duplex cache memory and the FIFO buffer and informing the host system about completions of the data writing; and

writing the data written in the FIFO buffer in the other one of the duplex cache memory after the host system

is informed about the completions of data writing to  
complete duplication of the data.